REMARKS

Summary Of The Office Action

Claims 1, 5, 9, 13, 14, and 17 stand rejected under 35 U.S.C. § 102(b) as being anticipated by Kimura (JP 2000-193936).

Claims 4, 12, and 16 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Kimura in view of Kurihara et al. (US 5,854,627).

Claims 1, 4, 5, 9, 12-14, 16, and 17 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Ozawa et al. (US 6,462,724) in view of Kurihara et al.

Claims 1, 4, 5, 9, 12-14, 16, and 17 stand rejected under 35 U.S.C. § 112, first paragraph.

Applicant thanks the Examiner again for the indication that claims 6 and 8 are allowed.

Summary of the Response to the Office Action

Applicant has amended claims 1, 4, 9, 12-14, 16, and 17 to further define the invention. Accordingly, claims 1, 4-6, 8, 9, 12-14, 16, and 17 are presently pending for consideration.

All Claims Comply With 35 U.S.C. § 112

Claims 1, 4, 5, 9, 12-14, 16, and 17 stand rejected under 35 U.S.C. § 112, first paragraph. Specifically, the Office Action alleges that "the original disclosure, when filed, does not fairly convey to one of ordinary skill in the art that inventor(s) had in their possession the above underlined features presently recited in independent claims 1, 9, and 14." Accordingly, Applicant has amended independent claims 1, 9, and 14 in accordance with the Examiner's comments. Thus, Applicant respectfully submits that claims 1, 4, 5, 9, 12-14, 16, and 17 comply with the requirements of 35 U.S.C. § 112, first paragraph, and respectfully requests that the rejection be withdrawn.

All Claims Define Allowable Subject Matter

Claims 1, 5, 9, 13, 14, and 17 stand rejected under 35 U.S.C. § 102(b) as being anticipated by Kimura (JP 2000-193936), and claims 4, 12, and 16 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Kimura in view of Kurihara et al. (US 5,854,627). Applicant respectfully traverses these rejections as being based upon references that neither teach nor suggest the novel combination of features recites in independent claims 1, 9, and 14, and hence dependent claims 4, 5, 8, 12, 13, 16, and 17.

Independent claim 1, as amended, recites a gamma reference voltage generating circuit in a liquid crystal display including, at least, "a first gamma power unit formed of a first power voltage and outputting a first gamma voltage for a reflective driving mode of the liquid crystal display" and "a second gamma power unit formed of a second power voltage and outputting a second gamma voltage for a transmissive driving mode of the liquid crystal display." Similarly, independent claim 9, as amended, recites a liquid crystal display device including, in part, "a first output unit receiving the first voltage and producing a first gamma voltage during a reflective driving mode of the liquid crystal display panel" and "a second output unit receiving the second voltage and producing a second gamma voltage during a transmissive driving mode of the liquid crystal display panel." Likewise, independent claim 14, as amended, recites a method for generating a reference voltage for digital/analog conversion including, in part, "providing the first voltage received from the power converter to a first power unit during a reflective driving mode of the liquid crystal display device to generate a first gamma voltage" and "providing the second voltage received from the power converter to a second power unit during a transmissive driving mode of the liquid crystal display to generate a second gamma voltage."

The Office Action alleges that the first and second reference potential generating sections 46a and 46b of Kimura are the "first gamma power unit" and the "second gamma power unit," respectively. Applicant respectfully disagrees.

In contrast to Applicant's claimed invention, the first and second reference potential generating sections 46a and 46b in FIG. 2 of Kimura both receive the same power input voltage, presumably across terminals disposed at either ends of the resistor strings of the reference potential generating circuit 46. In addition, contrary to the Office Action's allegation that Kimura "inherently" discloses a power converter producing first and second power voltages, Applicant respectfully asserts that Kimura is completely silent with respect to any power converter producing first and second power voltages.

Accordingly, Applicant respectfully asserts that Kimura fails to teach or suggest "a first gamma power unit *formed of a first power voltage* and outputting a first gamma voltage for a reflective driving mode of the liquid crystal display," and "a second gamma power unit *formed of a second power voltage* and outputting a second gamma voltage for a transmissive driving mode of the liquid crystal display," as recited by amended independent claim 1. Similarly, Applicant respectfully asserts that Kimura fails to teach or suggest "a first output unit *receiving the first voltage* and producing a first gamma voltage during a reflective driving mode of the liquid crystal display panel" and "a second output unit *receiving the second voltage* and producing a second gamma voltage during a transmissive driving mode of the liquid crystal display panel," as recited by amended independent claim 9. In addition, Applicant respectfully asserts that Kimura fails to teach or suggest "providing *the first voltage received from the power converter* to a first power unit during a reflective driving mode of the liquid crystal display device to generate a first gamma voltage" and "providing *the second voltage received from the power converter* to a

second power unit during a transmissive driving mode of the liquid crystal display to generate a second gamma voltage," as recited by amended independent claim 14.

Claims 1, 4, 5, 9, 12-14, 16, and 17 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Ozawa et al. (US 6,462,724) in view of Kurihara et al. Applicant respectfully traverses these rejections as being based upon references that neither teach nor suggest the novel combination of features recites in independent claims 1, 9, and 14, and hence dependent claims 4, 5, 8, 12, 13, 16, and 17.

The Office admits that Ozawa et al. fails to "disclose expressly the first gamma power unit (501) receiving a first power voltage from a power converter and the second gamma power unit (504) receiving a second power voltage from the power converter." Accordingly, the Office Action relies upon Kurihara et al. for allegedly teaching gamma power units receiving first and second power voltages from a power converter. Thus, the Office Action concludes that "it would have been obvious to one of ordinary skill in the art at the time [of] the invention was made to provide a power converter in the LCD device of Ozawa, in view of the teaching in the Kuirhara reference, because this would generate a plurality of different desired voltages while using a low power consumption due to a decrease of the amount of current flowing in the resistors, as taught by Kurihara (col. 4, line 66 through col. 5, line 12)." Applicant respectfully disagrees.

Initially, Applicant respectfully submits that Ozawa et al. discloses a potential output unit, as shown in FIG. 25, that comprises potential generating circuits 501-506 for generating potentials necessary to apply effective voltages V0-V5 to a liquid crystal. Correspondingly, Ozawa et al. teaches using a combination of switches in order to produce different data signals

507-510. Accordingly, Applicant respectfully asserts that Ozawa et al. explicitly teaches using a plurality of switches to produce the necessary data signals to drive the liquid crystal.

In direct contrast to Ozawa et al., Kurihara et al. explicitly teaches using a resistive string that divides each of voltage ranges between reference voltages to generate multi-level grayscale voltages to be applied to a liquid crystal layer. In addition, Kurihara et al. explicitly teaches (col. 5, lines 5-8) that by using the resistive string, "almost no inflow or outflow of current from other than the reference voltage application terminals of the resistive string to which the maximum and minimum reference voltages are applied." Kurihara et al. concludes (col. 5, lines 9-12) that "[t]his in turn reduces the power consumption of the drain driver 11 and power supply circuit 13 and therefore the overall power consumption of the liquid crystal display as a whole."

Applicant respectfully asserts that one of ordinary skill in the art would not look to Ozawa et al. to incorporate the teachings of Kurihara et al. since Ozawa et al. does not use the resistive string disclosed by Kurihara et al. to produce the necessary data signals to drive the liquid crystal. In other words, Applicant respectfully asserts that since Ozawa et al. discloses a switching system for producing the necessary data signals to drive the liquid crystal, then one of ordinary skill in the art would not look to Kurihara et al. to substitute a resistive string for the potential output unit, as shown in FIG. 25 of Ozawa et al. Moreover, Applicant respectfully asserts that one of ordinary skill in the art would not combine the teachings of Kurihara et al. with Ozawa et al. to "decrease an amount of current flowing in the resistors" since Ozawa et al. does not implement resistors in the potential output unit, in FIG. 25 of Ozawa et al.

Accordingly, Applicant respectfully notes that MPEP 2143.01 instructs that "[o]bviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention, where there is some teaching, suggestion or motivation to do

so found either explicitly or implicitly in the references themselves or in the knowledge generally available to one of ordinary skill in the art." Moreover, MPEP 2143 instructs that "[t]he mere fact that references can be combined or modified does not render the resultant combination obvious unless that prior art also suggests the desirability of the combination. *In re Mills*, 916 F.2d 680, 16 USPQ2d 1430 (Fed. Cir. 1990)." Thus, Applicant respectfully asserts that the Office Action has not provided any motivation for one of ordinary skill in the art to modify the teachings of Ozawa et al. with the teachings of Kurihara et al. to achieve the invention of at least independent claims 1, 9, and 14.

Furthermore, Applicant respectfully notes that MPEP 2143.02 instructs "[i]f proposed modification would render the prior art invention being modified unsatisfactory for its intended purpose, then there is no motivation to make the proposed modifications. *In re Gordon*, 733 F.2d 900, 221 USPQ 1125 (Fed. Cir. 1984)." Accordingly, since Ozawa et al. teaches using a potential output unit, as shown in FIG. 25, that makes use of a plurality of switches, Applicant respectfully asserts that combining the teachings of Furihara et al. with Ozawa et al. would actually render Ozawa et al. unsatisfactory for its intended purpose. For example, Ozawa et al. requires use of the ON/OFF signal 5308 to simultaneously control both the Image Signal Repeater 403 (in FIG. 23) and the Converted Potential Output Unit 401 (in FIG. 23). Accordingly, Applicant respectfully asserts that substituting the resistive string taught by Furihara et al. would render the data signal potential controlling means 5314 (in FIG. 23) of Ozawa et al. unsatisfactory for its intended purpose since Ozawa et al. explicitly discloses that the data signal potential controlling means 5314 operated in response to the ON/OFF state signal 5308.

For the above reasons, Applicant respectfully asserts that the rejections under 35 U.S.C. §§ 102(b) and 103(a) should be withdrawn because neither Kimura, Ozawa et al., and/or Kurihara et al., whether taken singly or combined, either teaches or suggests the novel combination of features recited in amended independent claims 1, 9, and 14, and hence dependent claims 4, 5, 12, 13, 16, and 17.

CONCLUSION

In view of the foregoing, Applicant respectfully requests reconsideration and timely allowance of the pending claims. Should the Examiner believe that there are any issues outstanding after consideration of this response, the Examiner is invited to contact Applicant's undersigned representative to expedite prosecution.

If there are any other fees due in connection with the filing of this response, please charge the fees to our Deposit Account No. 50-0310. If a fee is required for an extension of time under 37 C.F.R. § 1.136 not accounted for above, such an extension is requested and the fee should also be charged to our Deposit Account.

Respectfully submitted,

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